

Dec. 19, 1939.

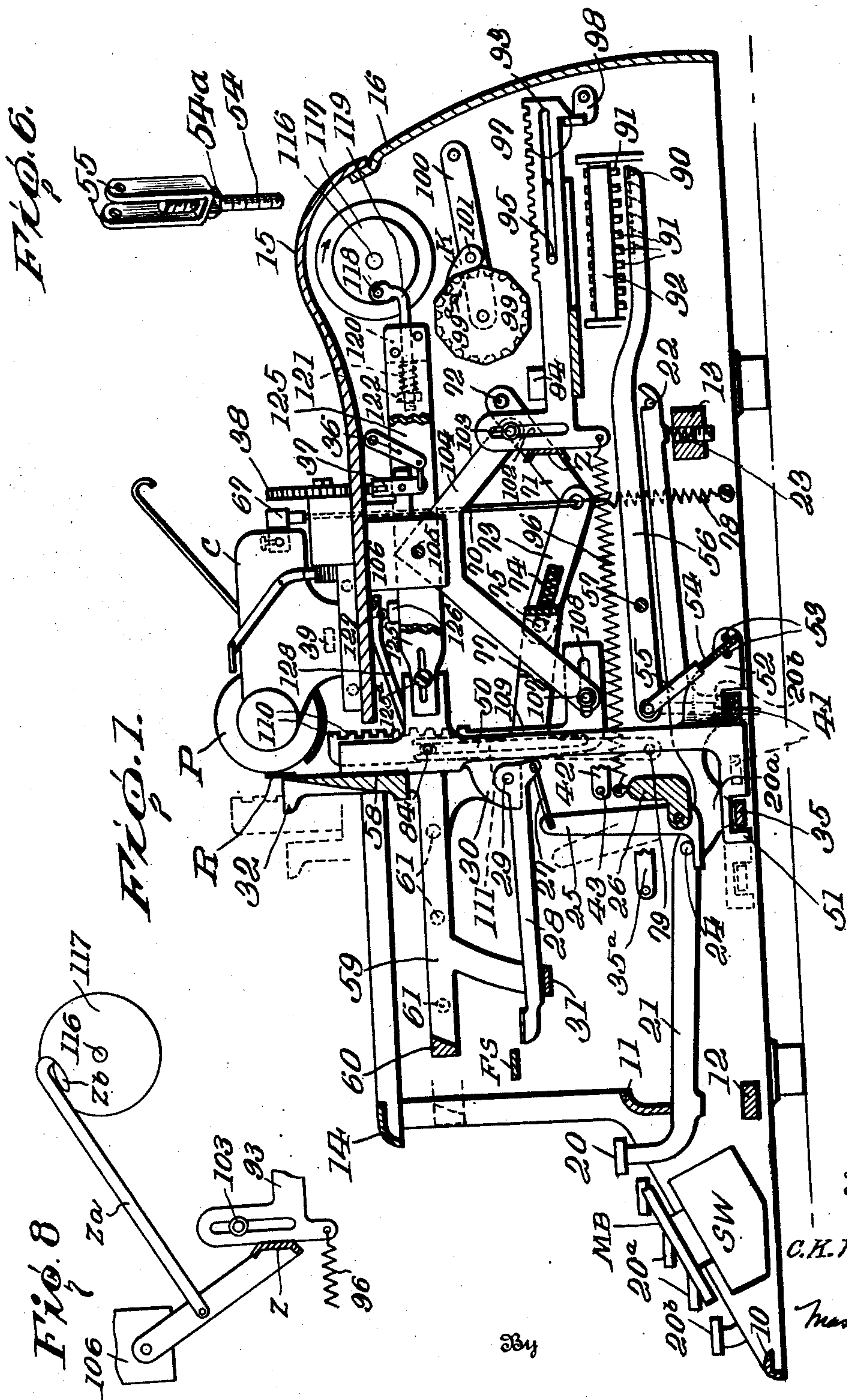
C. K. RAINEY

2,183,920

COMBINED TYPEWRITING AND ACCOUNTING MACHINE

Original Filed July 6, 1935

3 Sheets-Sheet 1



Inventor

C.H. RAINEY

Massachusetts,

Attorneys

Dec. 19, 1939.

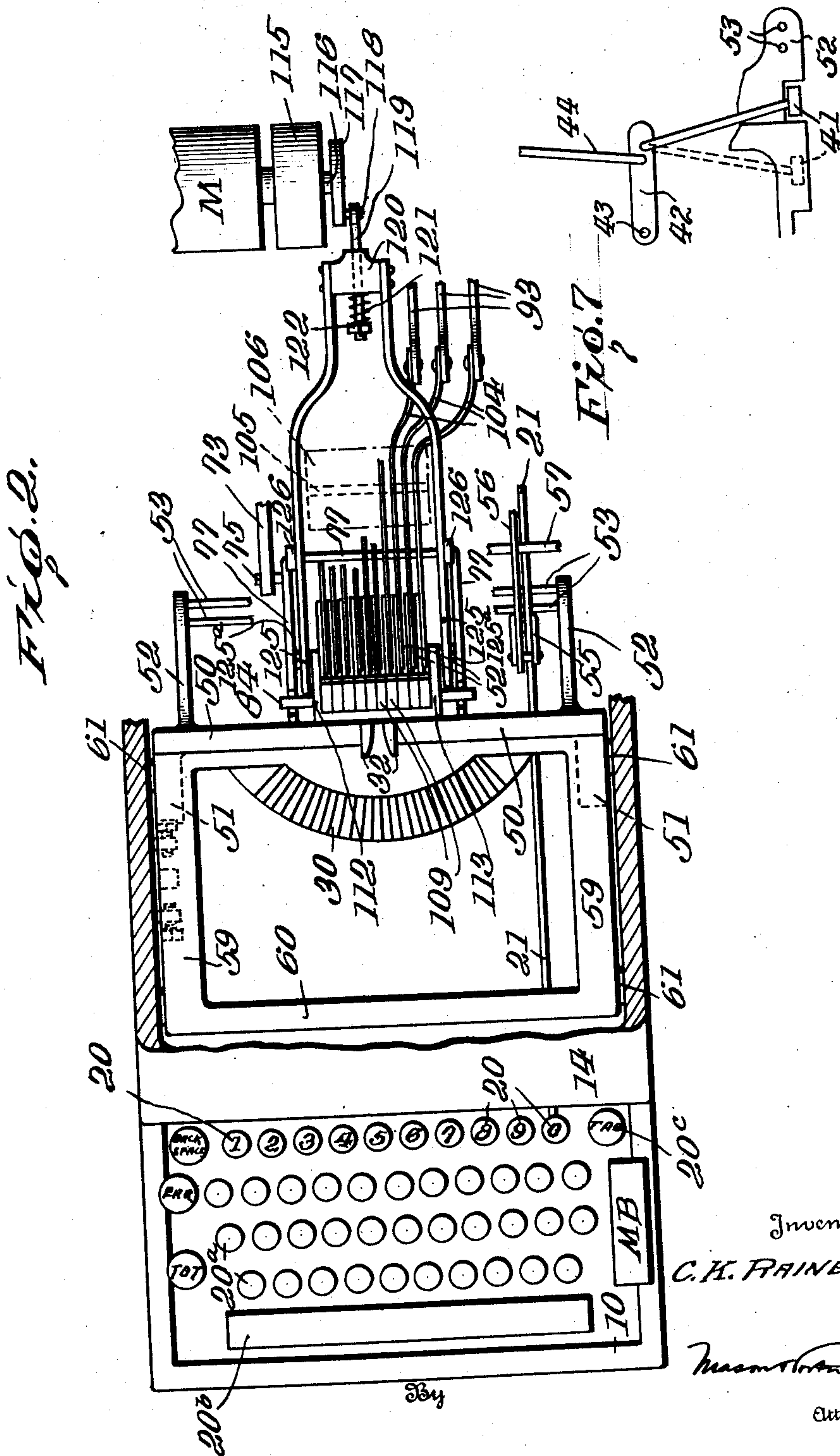
C. K. RAINEY

2,183,920

COMBINED TYPEWRITING AND ACCOUNTING MACHINE

Original Filed July 6, 1935

3 Sheets-Sheet 2



Dec. 19, 1939.

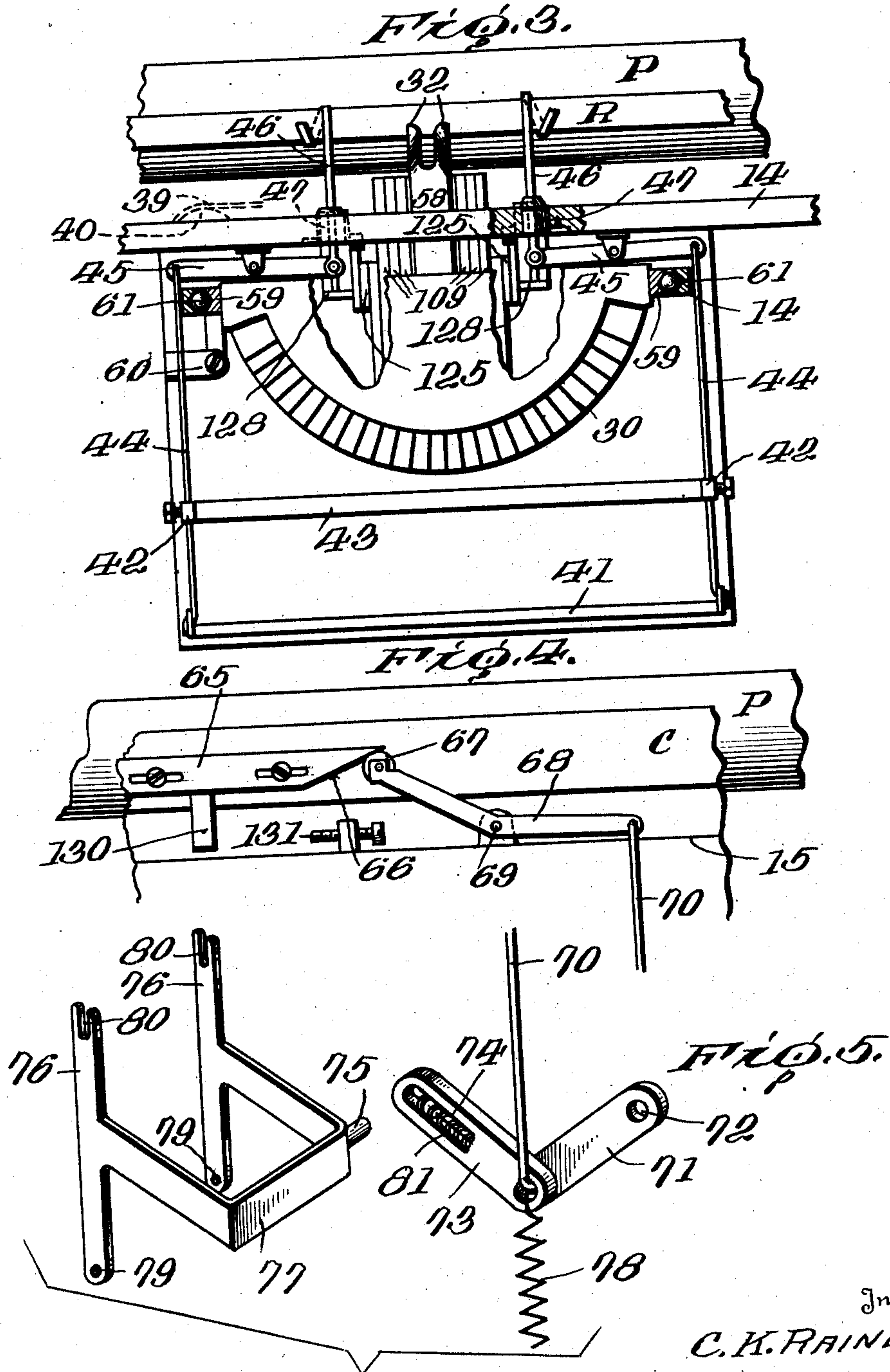
C. K. RAINEY

2,183,920

COMBINED TYPEWRITING AND ACCOUNTING MACHINE

Original Filed July 6, 1935

3 Sheets-Sheet 3



Inventor
C. K. RAINEY

Mason

By

Attorneys

UNITED STATES PATENT OFFICE

2,183,920

COMBINED TYPEWRITING AND ACCOUNT-
ING MACHINE

Clifton King Rainey, Knoxville, Tenn., assignor
of one-fourth to John F. Baker and one-fourth
to Forrest Andrews, both of Knoxville, Tenn.

Application July 6, 1935, Serial No. 30,174
Renewed September 15, 1939

19 Claims. (Cl. 101—46)

This invention relates to improvements in combined typewriting and accounting machines.

One of the features of the present invention is the provision of a structure in which is combined the functions of a typewriter and an accounting machine in such way that the device may be converted from a typewriter into an accounting machine, and vice versa.

Another feature of the present invention is the provision of such a structure in which the keys for actuating the typewriter and for controlling the setting up and printing of the computation printing means are all on a single keyboard, and the keys used for typing the numerals on the typewriter are used for setting up the computing machine parts corresponding to the same number as used for the typewriter, thus permitting of using the touch system (ordinarily taught for the operation of typewriters) for both the typing and computing devices of the machine.

Another feature of the present invention is the provision of such a structure in which both the typing and the printing of the items from the computation item printing type bars, are accomplished by separate devices in such a way that the decimal point of the computation item printing type bars or members prints at the same point or sighting position on the platen that the typewriting type bars would print if being used. In other words, the typing point for the typewriting type bars and the decimal point for the computation item printing type bars is the same.

Another feature of the present invention is the arrangement of the typewriter type bars and the computation item printing type bars in such way as to print on the platen at a vision point always visible to the operator except when type bars are actually in the operation of printing.

Another feature of the present invention is the provision of such a structure in which the items to be computed are set up and printed by computation item printing type bars actuated by the computing machine parts while the carriage is at a standstill, and are accumulated in regular sequence upon a register device.

A further feature of the present invention is the provision of means for effecting an automatic transfer from typing to adding functions, with a disconnection of the devices which effect spacing or lateral movement of the carriage while the structures are in the computation item printing position, and with devices for preventing the movement of the typewriting type bars while in such position.

Still another feature of the present invention is the provision of means for accomplishing shifts of the structure from the typewriting to the computation item printing position and back again, along with means for disabling typewriting structures or computation item printing structures to prevent wrongful action thereof.

Still another feature of the present invention is the provision of means for accomplishing a shifting from typewriting to computing functions by the use of the energy of the carriage moving spring.

A further feature of the present invention is the provision of a structure in which the typewriting and computation item printing devices are rigidly supported for their respective functions, with devices for effecting a relative movement thereof with respect to the carriage platen.

Still another feature of the present invention is the provision of a movable carriage and typewriting type bars operable from normal typewriter keys for typewriting, along with a computing structure including computation item printing type bars operable from the same keys for the printing and accumulating of items of computation, and a ribbon mechanism by which a single ribbon may be employed for both typewriting and computation item printing operations, this mechanism including parts operated by the individual keys during typewriting and operated from the computing mechanism during computing.

A still further feature of the present invention is the provision of a structure of this type in which a single set of normal typewriter keys is employed for the typewriting and for the setting up of the items to be computed, together with devices for selecting the type of operation to be effected, and preventing a wrongful action according to the selection accomplished.

With these and other features as objects in view, as will appear in the course of the following specification and claims, an illustrative form of practicing the invention is shown on the accompanying drawings, in which:

Figure 1 is an upright sectional view showing the assemblage of parts for typewriting and computing functions.

Figure 2 is a fragmentary horizontal sectional view with parts omitted for clearness, and showing the general assembly of structures.

Figure 3 is a transverse upright sectional view substantially on line 3—3 of Fig. 1.

Figure 4 is a fragmentary rear view showing

means for controlling the shifting of the structure from typewriting to computing function.

Figure 5 is a perspective view of other portions of the devices for shifting from typewriting to computing function.

Figure 6 is a detailed perspective view of a stirrup for connecting a setting lever with the corresponding key lever.

Figure 7 is a detail showing the supporting of the universal bar.

Figure 8 is a detail showing a conventionalized restoring bar.

It will be understood that the reference to "adding" in this specification and claims is a designation of the effecting of computing as distinguished from simple typewriting, and that the word includes the utilization of structures for performing other than simple arithmetic addition.

Since one of the features of the present invention is that of producing a permanent imprint of the descriptive phases (by simple typewriting) and of the numerical or computative phases (by printing), the reference hereinafter to "printable element" includes various surfaces and materials capable of receiving an impression, either from types with ink or ribbon transfer of pigment, or by the employment of other means for effecting a permanent impression.

In the drawings, the apparatus is shown as comprising a fixed frame including the cross members 10, 11, 12 and 13. A top plate 14 joins the upright side frames and cooperates with the rear portion 15 of the top plate for stiffening the fixed assemblage. It is preferred to close the rear of the structure by a plate 16.

This fixed structure supports a plurality of keys corresponding to normal typewriter keys. In Fig. 2 these keys are shown to be comprised in four banks and generally to correspond to a typewriter keyboard. In the illustrative form shown, there are ten keys in the upper bank, corresponding to types from 1 to 0. In the drawings, a single key lever is indicated, the others being omitted for clearness, but it will be understood that the other numeral keys are similar in arrangement, while the non-numeral or letter keys need not be provided with certain of the structures, as will be pointed out hereinafter.

The illustrated key 20 appearing in Figure 1 (being the key for 0) is mounted on a key lever 21 which extends rearwardly in the fixed structure and is supported by the general cross pivot rod 22 for all key levers, and is normally held in raised position by a spring 23 supported in the bar 13 of the fixed frame. This key lever has a pin 24 which engages with a forwardly extending end of a crank lever 25 pivotally supported in a stationarily supported cross comb bar 26 and connected at its upper end by a link 27 with one end of a typewriting type bar 28 which also is supported, as by the usual arcuate pivot 29, in an arcuate comb bar 30 forming a part of a shiftable assemblage, as will be described hereinafter. The typewriting type bar 28 normally rests upon the cross support 31 but is swung upward in the usual way when the key 20 is depressed, and enters between the guides 32 to print through the ribbon R upon a printable element located on the platen P of the carriage.

The downward movement of the key 20 during typewriting also causes a hump 20a on the lower edge of the key lever 21 to encounter a spacing universal bar 35 and move the latter downward.

This spacing bar is connected in suitable man-

ner (not shown) for actuating the lever 36 and thus the escapement 37 of a ratchet wheel 38 which controls the movement of the carriage C in response to the pull thereon of a cable 39 which is energized by the carriage spring 40 (Fig. 3) in the usual way.

Similarly, the downward movement of the key lever 21 depresses a ribbon universal bar 41 which is supported by arms 42 on pivots 43, and is connected by the links 44 to the levers 45 which are pivoted to the lower surface of the top structure 14, 15. The levers 45 at their inner ends are connected to the ribbon controlling wires 46 and thus serve to raise the same in the guides 47 and to elevate the ribbon to printing position when a key is struck, and operate likewise upon the release of the key to cause the ribbon R to be brought to a lower position to expose the letter which has just been typed.

The shiftable structure comprises vertical side members 50 having extensions 51, 52 at their bottoms, these extensions being cut away to provide downwardly open notches to receive the universal bars 35 and 41 (Fig. 1). The extension 52 supports two transverse rods 53 for guiding the threaded adjustable stems 54 of thin stirrups 55 (Fig. 6) which are pivoted at their upper ends to the setting levers 56 of the adding mechanism. Lock nuts 54a may be provided if desired, as shown in Figure 6 of the drawings, in order to maintain the adjustment. Each key lever 21 corresponding to a numeral key is provided with a setting lever 56 located substantially above it and connectable thereto by a stirrup 55 as will be described hereinafter. The ten setting levers 56 are supported by a transverse pivot rod 57 of the fixed structure.

This shiftable structure also includes the comb piece 30 and the upward extension 58 supporting the guides 32 employed during typewriting (see Fig. 3). The shiftable structure also includes the forwardly extending side bars 59 and the bridge connection 60 between the latter. The side bars 59 are supported by a plurality of bearing balls 61 for permitting easy forward and rearward movement of the shiftable structure. The carriage C is illustrated in Fig. 4 as having a member 65 adjustably connected thereto at a suitably selected position and having an inclined end surface 66 for engagement with a roller 67 carried by a shifting lever 68 which is mounted by a pivot 69 on the top plate 15. This lever 68 is connected by a link 70 (Figs. 1, 4 and 5) with the center point of a toggle system including the link 71 which is connected by a pivot 72 to the fixed frame, a link 73 having a slot 74 receiving the pin 75 of a shifting stirrup comprising the upright portions 76 and the extension and connecting portions 77. The toggle is normally pulled downward by a coil spring 78 connected to the fixed structure. It will be understood that the arms 76 of the shifting stirrup are spaced laterally of the adding and like devices. The lower ends of the arms 76 are supported by pivots 79 on the fixed frame, while the upper ends are bifurcated and have notches 80 to receive a transverse rod 84 supported by the members 50. The slot 74 in the link 73 receives a spring 81 which presses against the pin 75 and tends to force it toward the outer end of the slot 74.

The setting levers 56 are illustrated as of conventional design, each of them having a pressure piece 90 at the rear end for engagement with a pin 91 in the preselector pin plate 92. It

will be understood that this preselector plate has as many rows of pins as there are columns in the capacity of the adding mechanism. In Fig. 2, ten such columns are indicated, and correspondingly there will be ten rows of pins 91, each comprising ten pins, in the preselector plate 92. This preselector plate is supported for horizontal transverse movement step by step as the keys are operated, by mechanism not illustrated but well known in the art. Such preselector structures are shown in Landsiedel 1,078,358; Kottmann 2,034,345; Greve 1,707,303 and 1,897,932; and Siewert 1,957,617. The function of this structure is to permit the operator, by depressing the proper keys, to raise the corresponding pin 91 and then effect a leftward movement (considered from the viewpoint of the operator) of the preselector plate 92 by one column, so that the next key operation will similarly set up a numeral for the succeeding column, etc., in known manner.

Cooperating with this preselector pin plate 92 is a corresponding number of adding racks 93 which are supported by a fixed comb bar 94 and a rod 95 for rectilinear forward movement under the action of the individual springs 96. The rearward end of each adding rack has a downwardly extending finger 97 for engagement with the preselected pin 91 which is presented in its path, and pivoted latching equipment 98 is provided for releasably securing the racks in the position shown in Figure 1, against the tension of the springs 96.

The upper edge of each rack is provided with teeth for engagement with a corresponding gear 99 in the register mechanism K which includes the supporting levers 100 for moving the wheels 99 into and out of engagement with the corresponding racks, and a zero stop pawl 101 for limiting the backward movement of the individual gears 99 at a zero position during totalizing. It will be understood also that normal mechanisms for carrying-over or transferring from one gear 99 to the next are employed: such devices are well known in the art and are not here illustrated as details thereof are not a part of the present invention.

The forward end of each of the adding racks 93 includes a structure having a vertical slot 102 for receiving a small roller 103 carried at the rear end of a corresponding angle lever 104 which is mounted by a pivot 105 on a comb block 106 supported at the lower surface of the top plate 14, 15. The forward end of each lever 104 is connected by a roller 107 with the walls of a slot 108 in the rearwardly extending portion of a corresponding adding computation item printing type bar 109 which has printing types 110 along the upper portion of its rear edge (Fig. 1). These item printing type bars fit closely one against the other (Fig. 2) so that the numerals are printed in close association with one another. Since it is desirable to have the adding racks 93 spaced a greater distance apart for convenience of mechanical assemblage and operation, the rearward arms of the crank levers 104 are successively arched outward (Fig. 2) to afford this clearance of the adding racks 93.

The item-printing type bars 109 have slots 111 for engaging the rod 94 which thus serves to hold them in alignment and against escape from the groove provided in the shiftable structure by the end walls 112 or a portion thereof (Fig. 2). An error key may be employed for moving the preselector plate 92 backward and

accomplishing a clearance of the corresponding pin to eliminate an error in striking a key while setting up for adding. The details of these features are not a part of the present invention. Such a key is disclosed in Figure 3 of Landsiedel 1,078,358.

The keyboard also includes the keys 20a for the letters. These keys do not have setting levers 56 nor stirrups 55 associated therewith. The spacer bar 20b operates upon the spacing universal bar 35 during normal typewriting in the usual way.

The keyboard also includes a motor bar MB which upon depression closes a switch SW and thus energizes an impulse-type motor M (Fig. 2) which in association with its clutch system 115 is caused to effect a single revolution of the driven shaft 116 and then bring the shaft to a standstill after a movement of 360 degrees. Such motors and their employment in adding machines are well known (see, for example, the Stickney Patent 1,186,520, Fig. 2, and the Eachel Patent 1,269,797), and their usual connection for effecting a release of the latch means 98, the proper engagement and disengagement of the register K, the return of the preselector pin plate 92, and the clearing of the pins 91 well known in the art and is not illustrated herein.

According to the present invention, this motor has the further function of shifting the ribbon and accomplishing the printing of the item which has been set up by the proper operation of keys 20. For this purpose the shaft 116 driven by the motor is provided with a disk 117 having an eccentric pin 118 thereon. This pin is engaged with the end of a plunger 119 which extends through a block 120 and through a coil spring 121 and is provided with a nut 122 engaged with its threaded end. The block 120 is fixed at the rear end of the power-shift links 125 which have slots at their forward ends engaged with the pivots 125a (Figs. 1 and 2). The power-shift links 125 include humps 126 which engage rollers 127 supported on the resilient ribbon shifting levers 128 which extend forwardly and engage beneath the levers 45 and thus operate the ribbon guide wires 46 (Fig. 3). The levers 128 are pivoted on the lower surface of the top plate 14, 15.

The carriage C and its escapement is preferably provided with a tabulating release controlled by the key 20c (Fig. 2) and operating in the usual way to permit the free travel of the carriage until it is stopped by the engagement of the carriage lug 130 with the stop 131 on the top plate 15 (Fig. 4). Thus, by depressing the tabulating key, the carriage is released and is drawn toward the operators left in the usual way by the carriage spring 40 until the stops are engaged. The specific details of assemblage for this purpose form no part of the present invention: such structures may be found in Figs. 1 and 2 of the Hart Patent 1,270,411.

The keyboard also includes a "totals" key operating upon the mechanisms including the register K in known manner for accomplishing the movement of the computation item printing type bars and of the gears 99 for printing the total which has been accumulated in its register K. Equipments of this general type are well known, see for example Siewert 1,957,617.

The operation of the structure is as follows:

The machine is particularly adapted for employment in preparing lists including typewritten matter and price indications, these price indica-

tions being accumulated on the register and a total printed at the foot of the sheet. In such a case, for illustration, the typewritten matter is contained in columns at the left of the sheet and the price indication in a column at the right of the sheet.

Such a sheet is inserted into the carriage and advanced in the usual way until a proper line appears at the vision line (just above the ribbon in Fig. 3). The carriage is moved toward the operator's right as usual until it reaches the normal stop for the left-hand margin. The keys of the four row bank and the spacer bar are struck, as with the usual operation of typewriting, so that the proper matter is inserted in the columns for such matter. During this operation of the mechanism, the shiftable structure is at its rearward position as shown in full lines in Fig. 1. The striking of any key of the four row bank depresses the corresponding key lever 21. The pin 24 thus rocks the corresponding crank lever 25 and causes the corresponding typewriting type bar 28 to fly upwardly and strike the ribbon R and thus produce the corresponding impression. Likewise, each key lever 21 actuates the universal bars 35, 41, so that the ribbon is raised and the escapement actuated in the normal manner.

With the shiftable structure in its rearward position, i. e., the position for typewriting, the rods 53 by engagement with the threaded stem 54 of each of the stirrups 55 hold the stirrup in the full line position of Fig. 1, so that no movement is transmitted from the key levers 21 to the setting levers 56.

After completion of the typewriting, the tabulator key 20c is struck so that the carriage is released by rocking of the lever 36 so pawl 37 leaves the ratchet 38 and the carriage is released as in an ordinary typewriter, and is drawn toward the operator's left by the carriage spring. During this movement, the plate 65 presents its inclined surface 66 to the roller 67 so that the shifting lever 68 is rocked in a counterclockwise direction (Fig. 4), thus pulling upward on the link 70 against the action of spring 78. The toggle links 71 and 72 are straightened and a forward push is exerted on pin 75 which is transmitted through the stirrup structure 77 to the rod 84, and thus the shiftable structure is moved forwardly on its ball bearings 61. It will be noted that the slot in the connecting links 125 and the slots 108 in the item-printing type bars 109 permit this movement without any interference by these links or by the levers 104. This forward movement of the shiftable structure carries the printing or forward ends of the typewriting type bars 28 beneath a fixed stop FS so that they are prevented from upward movement, and also the pressure along the link 27 causes a rocking of the crank levers 25 into the dotted line position in which their lower arms are out of normal engagement by the corresponding pin 24 of the corresponding key lever 21. Thus the typewriting structures are out of action and the item-printing type bars are presented for use.

This shifting forward movement of the shiftable structure also moves the lower extensions 51 and 52 forwardly so that the universal bars 35 and 41 are moved into the dotted line position of Fig. 1 and thus are not encountered by the humps on the key levers 21 when the latter are depressed. These universal bars are illustrated in Fig. 7 as supported in the manner shown by the Smith Patent 1,016,968. Thus the

ribbon is not raised nor is the spacing escapement of the carriage actuated when the keys are struck for setting up items for adding.

Furthermore, this forward movement of the shiftable structure has moved the item printing type bars 109 until they are in a position forward of the ribbon R, and hence as each of them is raised in its guide structure, it clears the ribbon R and is moved upward until the proper type or printing element thereon is presented opposite the vision line, as aforesaid.

This forward movement of the shiftable structure has the further consequence of moving the rods 53 so that all of the stems 54 of the stirrups 55 are moved forwardly and the stirrups are now presented beneath humps 20b of the corresponding key levers 21 (dotted line position, Fig. 1).

The item to be added is now set up as in a normal ten-key computing machine, by striking the proper keys 20. The downward movement of each key lever 21 causes a pull in the corresponding stirrup 55, the length of this pull being adjusted by the screw 54 (Fig. 6), so that the corresponding setting lever 56 is actuated and the proper pin 91 in the first column is set up. The preselector pin plate 92 is then stepped toward the left of the operator in the usual way to present a new column of pins for the next setting operation. Thus, the pressing of keys 20 successively to set up the item to be added results in a corresponding preselection of pins on the preselector pin plate 92 in the usual way. Errors may be cleared by pressing the error key as usual (see Landsiedel 1,078,358).

When the item to be added is set up in full, the motor bar MB is pressed and the switch SW is closed. This causes the usual operations in the adding mechanism. Thus, the motor trips and releases latch means 98, and the adding racks are drawn forward by their individual springs until stopped by the selecting pins 91. According to the present structure, this forward movement of the individual racks also produces a rocking of the corresponding crank levers 104 and an upward movement of the corresponding item-printing type bars 109. It will be noted that the portion 97 of each rack makes a considerable idle movement before coming opposite the first pin 91 (corresponding to 0). This idle movement is utilized for raising the corresponding item-printing type bar 109 until its topmost type or printing element is opposite the vision line. The further increments of movement beyond this 0 position of the adding rack correspond to movements determined by the particular pin 91 selected and are reproduced at the item-printing type bar by the presentation of the corresponding type or printing element at the vision line.

In particular, it is preferred so to design the structure that the decimal point of a price item shall be located at the "vision point" for typewriting, i. e. at the point at which a typewriting type bar strikes during typewriting. Thus, the vision point constitutes a common reference for visual determination of where the typewriting and printing shall occur.

The impulse motor M normally has the further function of producing the printing sequence. The particular structure for this purpose is incorporated in the present invention and operates as follows: when the motor bar MB is depressed, the latches 98 are released, and the item-printing racks and adding type bars move to

proper position. The motor is now energized and its initial clockwise movement causes the eccentric pin 118 to move upward. The upward movement, which continues until the eccentric pin 118 is at top-center, causes the humps 126 to actuate the ribbon levers 128 and therewith (see Fig. 3) moves the levers 45 and the ribbon guides 46 and raise the ribbon to a point opposite the vision line, the levers 128 quickly effecting the positioning of the ribbon and then resiliently yielding for the remainder of the upward movement of the humps 126. The concurrent rearward movement of the pin 118 causes the links 125 to engage the rod 84 and draw the shiftable structure rearwardly so that the selected type or printing element on the item-printing type bars 109 are pressed against the ribbon R and thus print upon the sheet of paper located on the platen P.

Furthermore, the motor M has its usual function of releasing the register K so that the gears 99 of this register move into engagement with the racks 93 located therebelow during the printing operation (see the Stickney Patent 1,186,520). The further movement of the motor moves the eccentric pin 118 in a forward direction to clear the item-printing type bars 109 from the ribbon so that they may move freely downward. At this time the motor also operates a block Zc which actuates a link Za and moves a restoring bar Z (Fig. 8) which presses the racks back to initial position where they engage the latch means 98 and are thus retained. This restoring movement of the racks causes them to energize the corresponding gears 99 of the register K and set up corresponding amounts on these gears, the usual transfers occurring. At the completion of the restoring movement of the racks 93, the register is again raised out of engagement in the usual way.

Likewise, the release of the item-printing type bars from the ribbon R permits this ribbon and its supporting wires 46 to move downward freely, as the ribbon levers 128 are no longer held upward by the humps 126.

It will be noted that the spring 81 in the toggle system (Fig. 5) permits the rearward movement of the shiftable structure in printing and assists the motor in the forward return movement thereof.

During the printing, the item-printing type bars are presented against the ribbon and are thus pressed against the paper. Various thicknesses of paper and ribbon may be compensated for, and impressions delivered at a desired pressure, by adjusting the nut 122 to determine the strain in the spring 121.

After the item has thus been printed, the carriage can be manually shifted back toward the operator's right in the usual way against the action of the carriage spring 40. In this movement, the inclined surface 66 of member 65 releases the roller 67 and the link 70 is drawn downward by the spring 78, thus moving the links 71 and 73 downward and causing the rearward movement of the shiftable structure back to the full line position of Fig. 1. This movement withdraws the typewriting type bars 28 from beneath the fixed stop FS, restores the universal bars 35 and 41 to positions beneath the humps of the key levers, restores the transfer levers 25 to their full line position ready for actuation by the pins 24, and moves the stirrups 55 out of engagement by the key levers. Thus the adding mechanisms are thrown out of serv-

ice and the typewriting mechanisms restored for operation. The platen is rotated by any appropriate mechanism, and presents a new line of the sheet of paper at the vision line and the next item is now typed, the price set up, and addition made in the manner described above. This continues as customary until the sheet has been completed.

The total may then be taken. The carriage is moved to proper position and the shiftable structure is brought forward. The totals key and the motor bar MB are pressed. This results, by usual structures, in releasing the register K so that its actuated gears 99 move into engagement with the corresponding racks 93. The latch means 98 is then released so that the springs 96 draw the racks toward the left (Fig. 1) while turning the gears 99. As each gear comes to 0 position, its pin 99a engages the corresponding pawl 101 and thus stops the rack at a corresponding position, and thus also the corresponding adding sectors 109 present the corresponding type at the vision line ready for further printing. The impulse motor M then produces the printing as usual.

It should also be obvious that the invention is not limited solely to the form of construction shown but that it may be modified in many ways within the scope of the appended claims.

I claim:

1. In a typing and accounting machine, a platen, a set of typewriting type bars supported in front strike relation to said platen, a set of item-printing type bars, a frame on which said typewriting type bars are mounted, means for bringing about relative movement between the frame and the platen for position the typewriting type bars in cooperative relation to said platen or for temporarily discontinuing said cooperative relation and providing an item-printing type bar receiving space between the typewriting type bars and said platen, means for selectively presenting item-printing type bars in cooperative relation to the platen in said space, key-actuated means for actuating the typewriting type bars when they are presented in cooperative relation to the platen, and key-actuated means for controlling the selective presentation of the item-printing type bars in said space.

2. In a typing and accounting machine, a platen, a set of typewriting type bars supported in front strike relation to said platen, a set of item-printing type bars, a frame on which said typewriting type bars are mounted shiftable in the fore and aft direction relative to said platen for presenting the typewriting type bars in cooperative relation to said platen or for causing the typewriting type bars to move out of said cooperative relation and provide a space between them and said platen, means for selectively presenting the item-printing type bars in cooperative relation to the platen in the space before the platen provided by shifting of the frame, key-actuated means for actuating the typewriting type bars when they are presented in cooperative relation to the platen, and key-actuated means for controlling the selective presentation of the item-printing type bars when the space therefor is provided before the platen.

3. In a typing and accounting machine wherein is included means for transferring the control of a keyboard from an item-printing type bar of one order successively to other adjacent orders; means for holding a printable element, a set of typewriting type bars, a set of item-printing type bars, slidably mounted means common to both

sets of type bars for supporting and selectively presenting said sets of typewriting type bars or item-printing type bars for printing at a common sighting position, and means engageable with the selectively presented type bars for effecting individual operation of the typewriting type bars or for controlling the setting successively of said item-printing type bars.

4. In a typing and accounting machine wherein is provided means for holding a printable element, a set of typewriting type bars, a set of item-printing type bars, item-printing type bar selecting means and item-printing type bar selection controlling means; a keyboard common to both sets of type bars, a shiftably mounted common carrier for both sets of type bars, and means movable with the carrier for selectively connecting said keyboard in actuating relation with said typewriting type bars or with said controlling means.

5. In a typing and accounting machine, a platen, a set of typewriting type bars pivotally supported in front strike relation to said platen, a set of item-printing type bars disposed beneath said platen, key means common to both sets of type bars, a fore and aft shiftable frame with which said type bars are bodily movable and shiftable to present one or the other of the sets of type bars in position for operating against said platen, means to shift the frame, and means operable incident to the shifting of the frame for effectually connecting the key means in control relation with a selected set of said type bars.

6. In a typing and accounting machine, a set of typewriting type bars, a set of item-printing type bars, key means common to both sets of type bars, means for effectually connecting the key means in control relation with a selected one only of said sets of type bars and including a shiftable frame with which both sets of type bars are bodily movable, and means operative only when the key means is connected in control relation with the item-printing type bars for moving the frame bodily to cause said item-printing type bars to print.

7. In a typing and accounting machine wherein is provided, means for holding a printable element, a set of typewriting type bars, a set of item-printing type bars, item-printing type bar setting means, item-printing type bar selecting means, item-printing type bar selection controlling means; a keyboard common to both sets of type bars, means for selectively connecting said keyboard in actuating relation with said typewriting type bars or with said controlling means, a frame on which said item-printing type bars are mounted, and means for moving the frame to effect simultaneous engagement of a set multiple of the item-printing type bars with said printable element.

8. In a typing and accounting machine wherein is provided, a set of typewriting type bars, a set of item-printing type bars, a set of typewriting type bar actuating devices, and a set of item-printing type bar selecting and setting devices; key means common to both sets of type bars, a shiftably mounted common carrier for both sets of type bars, and means effective upon movement of said carrier for selectively connecting the key means in control relation with one only of said sets of devices to enable individual actuation of the typewriting type bars or the controlling of the setting of selected multiples of item-printing type bars into position for simultaneous printing.

9. In a typing and accounting machine where-

in is provided, a set of typewriting type bars, a set of item-printing type bars, a set of typewriting type bar actuating devices, and a set of item-printing type bar selecting and setting devices; key means common to both sets of type bars, and means for selectively connecting the key means in control relation with one only of said sets of devices to enable individual actuation of the typewriting type bars or the controlling of the setting of selected multiples of item-printing type bars into position for simultaneous printing, said last named means including a shiftable frame with which both sets of type bars are bodily movable.

10. In a typing and accounting machine, a platen, a set of typewriting type bars pivotally supported in front strike relation to said platen, a set of item-printing type bars disposed beneath the platen, key means common to both sets of type bars, a frame on which both sets of type bars are mounted shiftable in the fore and aft direction to present one or the other of the sets of type bars in position for operating against said platen, a set of typewriting type bar actuating devices, a set of item-printing type bar selecting and setting devices, and means rendered effective upon shifting of said frame for selectively connecting the key means with one or the other of said sets of devices to enable individual actuation of the typewriting type bars or the controlling of the setting of selected multiples of item-printing type bars into position for simultaneous printing.

11. A machine as in claim 10 in which there is included means interposed between the platen and the typewriting type bars whenever the frame is shifted to connect the key means in control relation with said selecting and setting devices and effective for positively preventing typewriting type bar movement.

12. In a typing and accounting machine, a platen, a set of typewriting type bars pivotally supported in front strike relation to said platen, a set of item-printing type bars disposed beneath the platen, key means common to both sets of type bars, a frame on which both sets of type bars are mounted shiftable in the fore and aft direction to present one or the other of the sets of type bars in position for operating against said platen, a set of typewriting type bar actuating devices, a set of item-printing type bar selecting and setting devices, means rendered effective upon shifting of said frame for selectively connecting the key means with one or the other of said sets of devices to enable individual actuation of the typewriting type bars or the controlling of the setting of selected multiples of item-printing type bars into position before said platen, and motor driven means for shifting the frame to move the set multiples of item-printing type bars into printing engagement with the platen.

13. In a typing and accounting machine, a platen, a set of typewriting type bars pivotally supported in front strike relation to said platen, a set of item-printing type bars disposed beneath the platen, key means common to both sets of type bars, a frame on which both sets of type bars are mounted shiftable in the fore and aft direction to present one or the other of the sets of type bars in position for operating against said platen, a set of typewriting type bar actuating devices, a set of item-printing type bar selecting and setting devices, means rendered effective upon shifting of said frame for selectively connecting the key means with one or the other of said sets of devices to enable individual actuation

of the typewriting type bars or the controlling of the setting of selected multiples of item-printing type bars into position before said platen, means for shifting the frame to move the set multiples of item-printing type bars into printing engagement with the platen, a ribbon, means for positioning the ribbon to receive typewriting type bar impressions, and other means operable incident to movement of the frame for positioning the ribbon to receive item-printing type bar impressions.

14. In a typing and accounting machine wherein is provided, means for holding a printable element, a set of typewriting type bars, a set of item-printing type bars, item-printing type bar setting means, item-printing type bar selecting means and item-printing type bar selection controlling means; key means common to both sets of bars, a frame on which both sets of type bars are mounted shiftable to present one or the other set of type bars in cooperative relation with said printable element, means for selectively connecting said keyboard in actuating relation with said typewriting type bars or with said controlling means, said holding means being movable for presenting successive parts of the printable element for receiving typing or printing thereon, and means operated by movement of said holding means for shifting said frame.

15. In a typing and accounting machine, a movable frame, a set of typewriting type bars and a set of item-printing type bars mounted on said frame, depressible key levers, devices for controlling movement of the item-printing type bars and including a setting lever associated with each key lever, each said key lever having a typewriting type bar actuating element and a setting lever actuating shoulder, an operator for imparting movement from each element to one typewriting type bar, an operator for imparting movement from each shoulder to the associated setting lever, and means movable with the frame for shifting the operators to alternately effective and ineffective positions.

16. In a typing and accounting machine, a frame, a set of typewriting type bars and a set of item-printing type bars mounted on said frame, depressible key levers, devices for controlling movement of the item-printing type bars and including a setting lever associated with each key lever, each said key lever having a typewriting type bar actuating element and a setting lever actuating shoulder, an operator for imparting movement from each element to one typewriting type bar, an operator for imparting movement from each shoulder to the associated setting lever, and a common movable means for effecting movement of both operators to alternately effective and ineffective positions, said last named means comprising a shiftable frame on which both sets of type bars are supported.

17. In a typing and accounting machine wherein is included means for transferring the control of a keyboard from an item-printing type bar of one order successively to other adjacent orders; means for holding a printable element, a set of typewriting type bars, a set of item-printing type bars, slidably mounted means common to both sets of type bars for supporting and selectively presenting said sets of typewriting type bars or item-printing type bars for printing at a common sighting position, means engageable with the selectively presented type bars for effecting individual operation of the typewriting type bars or for controlling the setting successively of said item-printing type bars, and means for effecting simultaneous engagement of a set multiple of the item-printing type bars with the printable element.

18. In a typing and accounting machine wherein is included means for transferring the control of a keyboard from an item-printing type bar of one order successively to other adjacent orders; means for holding a printable element, a set of typewriting type bars, a set of item-printing type bars, slidably mounted means common to both sets of type bars for supporting and selectively presenting said sets of typewriting type bars or item-printing type bars for printing at a common sighting position, means engageable with the selectively presented type bars for effecting individual operation of the typewriting type bars or for controlling the setting successively of said item-printing type bars, and means including said slidably mounted means for effecting simultaneous engagement of a set multiple of the item-printing type bars with the printable element.

19. In a typing and accounting machine wherein is included means for transferring the control of a keyboard from an item-printing type bar of one order successively to other adjacent orders; means for holding a printable element, a set of typewriting type bars, a set of item-printing type bars, slidably mounted means common to both sets of type bars for supporting and selectively presenting said sets of typewriting type bars or item-printing type bars for printing at a common sighting position, means engageable with the selectively presented type bars for effecting individual operation of the typewriting type bars or for controlling the setting successively of said item-printing type bars, means including said slidably mounted means for effecting simultaneous engagement of a set multiple of the item-printing type bars with the printable element, and means preventing actuation of one set of said type bars when the other set is presented for engagement with said printable element.

CLIFTON KING RAINEY.